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Inventor(s) : YASUMURO CHIAKI, SHIMIZU NOBUHIRO,
TAKAHASHI HIROSHI, SHIRAKAWABE YOSHIHARU,
ARAI TADASHI
Assignee : SEIKO INSTRUMENTS INC

Abstract

PROBLEM TO BE SOLVED: To make easily manufacturable a cantilever and to make accurately measurable the surface shape of a sample with recesses and projections having aspect ratios by sharpening the free end of a cantilever body.

SOLUTION: First, a mask 120 for etching a cantilever is formed on an SOI layer 110C, the SOI layer 110C is subjected to isotropic etching, its exposed part is etched in a taper shape, and then the mask 120 is eliminated. Then, the reverse side of the SOI wafer 110 is subjected to patterning, silicon is etched from the reverse side, a burial oxide film 110B of the SOI wafer 110 is eliminated, and a lever body 3 and a base part 2 are formed, thus obtaining the cantilever 1. As a result, since no additional tip is owned, a manufacturing process can be simplified and various kinds of restrictions cannot be given to a later process. Also, an angle for mounting the cantilever to a device can be set to an angle vertical to the sample or an angle close to it.